WHAT IS CLAIMED IS:

1.    An asynchronous transfer mode (ATM)-based delay adaptive scheduling apparatus adaptive according to a traffic type, comprising:

a scheduling portion that categorizes at least one cell according to the traffic type and generates service information including the traffic type, a

5    priority of service provision, and a service finish time;

a storing portion that stores said at least one cell about which service information is generated;

an outputting portion that reads said at least one cell, which is to be serviced, from the storing portion, and then outputs the read cell;

10    an input/output managing portion that counts said at least one cell that is input to the scheduling portion and output from the outputting portion, and manages an input/output of said at least one cell; and

a controlling portion that decides whether to service said at least one cell or not based on the service information, and outputs a control signal

15    command to read said at least one cell stored in the storing portion and to output the read cell.

2.    The scheduling apparatus of claim 1, wherein the scheduling portion comprises:

a categorizing portion that categorizes said at least one cell according to the traffic type; and

5       a generating portion that generates the service information of said at

least one cell including at least one of the traffic type of said at least one cell,

the priority of service provision, and the service finish time.

3.      The scheduling apparatus of claim 1, wherein the controlling

portion comprises:

an inquiry portion that inquires about the traffic type of said at least

one cell in the storing portion according to the service information; and

5       a service deciding portion that decides whether to service a cell of low

priority or not, by comparing the service finish time of a cell of high priority

with the service finish time of all of a plurality of cells based on the result of

the inquiry of the inquiry portion,

wherein a storage address of said at least one cell, which is to be

10      serviced,      is      output      to      the      outputting      portion.

4. The scheduling apparatus of claim 2, wherein the generating portion

generates service information including at least one of the traffic type, priority

of service provision, and the service finish time for constant bit rate (CBR)

cells, and for at least one of real-time variable bit rate (rt-VBR) cells, non real-

5       time variable bit rate (nrt-VBR) cells, available bit rate (ABR) cells, and

unspecified bit rate (UBR) cells, the generating portion generates service

information including at least one of the traffic type, priority of service

provision, the service finish time, and an address of a field where cells are

written.

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5. The scheduling apparatus of claim 1, wherein the storing portion comprises:

a first storing portion for storing each of said at least one cell that is allocated with fixed bandwidth;

5       a second storing portion for storing each of said at least one cell that is allocated with variable bandwidth.

6. The scheduling apparatus of claim 1, wherein the outputting portion comprises a cell reading portion that reads said at least one cell to be serviced and outputs the read cell to an asynchronous transfer mode (ATM) switch.

7. The scheduling apparatus of claim 1, wherein the input/output managing portion comprises a buffer controlling portion that controls an occupancy capacity of the storing portion below a predetermined threshold by comparing the occupancy capacity with the predetermined threshold, an input

5    cell counting portion that counts the input cell and outputs the cell to the buffer controlling portion, and an output cell counting portion that counts the number of cells output from the outputting portion.

8. A method for asynchronous transfer mode (ATM) based delay adaptation according to a traffic type, comprising the steps:

(a)    categorizing a cell according to the traffic type and generating service information including the traffic type, a priority of service provision,

5    and a service finish time;

(b)    deciding whether to service the cell or not based on the service information; and

(c)    outputting the cell that is to be serviced.

9.    The method of claim 8, wherein the step (a) comprises the sub-steps of:

(a1) categorizing the cell according to the traffic type;

(a2) generating the service information of the cell including the traffic type, the priority of service provision, and the service finish time; and

(a3) storing the cell and the service information.

10.    The method of claim 8, wherein the step (b) comprises the sub-steps of:

(b1) inquiring about the traffic type according to the service information;

(b2) deciding whether to service a cell of low priority or not, by comparing the service finish time of a cell of high priority with the service finish time of all cells; and

(b3) outputting a storage address of the cell that is decided to be serviced in the sub-step (b2).

11.    The method of claim 10, wherein the steps (b1) through (b3) are repeated with respect to a cell of high priority when there is no cell of low priority.

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12. The method of claim 10, wherein in the sub-step (b3), the cell is output to an asynchronous transfer mode (ATM) switch.

13. The method of claim 8, further comprising the step (d) comparing an occupancy capacity of storing means where the cell is stored, with a predetermined threshold, and then regulating the occupancy capacity below the predetermined threshold.

14. The method of claim 13, wherein in the step (d), the occupancy capacity of the storing means is obtained by counting a number of input cells.